HESC - HEALTH EQUITY SCIENCES

HESC 6110. Doctoral Seminar in Health Equity
3 Credits (3)
Course focuses on the nature and origins of health disparities experienced by underserved and marginalized groups. Includes discussion of major health equity theories addressing how historical, social, political, environmental, and economic factors contribute to the creation and maintenance of health inequity in contemporary society.
Learning Outcomes
1. Describe theoretical frameworks that may explain health disparities/inequities
2. Draw upon methods from social epidemiology to describe and analyze the determinants of health disparities for particular groups
3. Generate ideas for programs and policies that promote health equity
4. Identify knowledge gaps, synthesize relevant information, and formulate focused research questions to address these gaps
5. Critically evaluate the social and behavioral science research design and methodology related to public health
6. Design, implement, and evaluate community-based behavior interventions to prevent disease and/or promote health
7. Design and implement community-based research that incorporates knowledge of pertinent cultural, social, behavioral, and biological factors
8. Recognize the unique strengths and integral role of cultural communities and social groups in defining the health problems they experience and directing the solutions

HESC 6120. Quantitative Research Methods in Health Equity Sciences
3 Credits (3)
Course focuses on the principles and application of human health-related research methods. Topics include research problem identification, study planning, data collection, statistical analysis, interpretation of findings, and dissemination of results.
Learning Outcomes
1. Plan, design, and carry out a variety of different research projects, including a dissertation
2. Understand and critique research as described both in technical reports (e.g., professional journals) and in the popular media (e.g., newspapers, magazines, TV)
3. Identify and critically review quantitative study designs in like with various threats to validity
4. Discuss problems associated with methodology and logistics of conducting research
5. Develop the essential elements for a research plan
6. Prepare and present a professional quality research plan

HESC 6130. Seminar in Behavioral and Social Change for the Promotion of Health Equity
3 Credits (3)
This doctoral seminar will cover social and behavioral science theories, research, and interventions aimed at promoting the health of individuals, groups, communities, and populations. Topics include historical and social obstacles to change, health policy and advocacy, and movements to promote change.
Learning Outcomes
1. Describe ways that individual health knowledge and behavior can be reflexive, socially situated, and embedded within larger social, cultural, and historical contexts.
2. Recognize the role of social and behavioral factors in shaping global mortality and morbidity.
3. Be attuned to the social patterning of public health problems and their implications for solutions.
4. Analyze how social structural dimensions of public health problems influence individual and social behavior.
5. Make a case for the importance of focusing on social and behavioral factors as part of a comprehensive public health strategy.
6. Demonstrate how multi-disciplinary efforts can be integrated to suggest a social-structural context for current public health problems.

HESC 6210. Advanced Multiple Regression for Health Equity Sciences
3 Credits (3)
Course focuses on advanced regression-based statistical analyses for health-related research methods. Topics include a deep look into multiple regression, model building, stepwise and hierarchical regression, polynomial and logistic regression.
Learning Outcomes
1. Conduct and interpret a multiple regression analysis containing continuous, as well as categorical variables.
2. Describe the terms used in a linear model.
3. Report and check assumptions for multiple regression.
4. Perform transformations to normalize data.
5. Determine which regression models (e.g., linear, polynomial, exponential) are appropriate for different data set using visualizations, such as scatter plots.
6. Build regression models to predict health outcomes.
7. Conduct and interpret various regression models such as polynomial, exponential, stepwise, and hierarchical in R.

HESC 6220. Regression-Based Structural Equation Modeling for Health Equity Sciences
3 Credits (3)
Course focuses on advanced regression-based statistical analyses for health-related research methods. Topics include an in-depth look into multiple regression, stepwise and hierarchical regression, exploratory and confirmatory factor analysis, plus structural equation modeling.
Learning Outcomes
1. Describe the difference between observed and latent variables.
2. Conduct and interpret exploratory factor analyses in R.
3. Conduct and interpret confirmatory factor analyses in R.
4. Create a model and investigate the application of the model using structural equation modeling in R.
5. Conduct and assess goodness-of-fit for different models.

HESC 6230. Mixed Linear Models for Health Equity Sciences
3 Credits (3)
This course covers the theory and application of mixed linear models, also known as multilevel models for health research. Topics include fixed and random variables, mixed linear models, and mixed effects logistic regression.
Learning Outcomes
1. Identify fixed and random variables.
2. Prepare data for mixed linear model analyses in R.

3. Describe multilevel structures and classifications in a data set and connect these structures to real-world scenarios.
4. Describe mixed linear models and apply mixed linear models to health-related datasets.
5. Apply mixed linear models to scenarios containing binary responses or outcomes (e.g., HIV+ or HIV-).

HESC 6240. Grant Writing in Health Professions
3 Credits (3)
The course addresses all aspects of grant proposal preparation and submission, including locating funding sources, formulating a budget, and developing and writing the proposal.
Learning Outcomes
1. Describe different types of grants
2. Identify sources of funding for health promotion programming and/or research
3. Prepare the narrative portion of a grant proposal
4. Prepare and justify a grant budget
5. Navigate the grant submission and review process

HESC 6250. Design and Evaluation of Programs to Promote Health Equity
3 Credits (3)
Course addresses the processes of successful public health program planning, the application of health education theory and methods, the development and implementation of interventions to address health-related issues, and the use of research methods to examine program formation and impact.
Learning Outcomes
1. Describe the importance of public health programs to promote health equity.
2. Define key components of public health programs that promote health equity.
3. Describe the major stages of evaluation of public health programs to promote health equity, including needs/community assessment, process evaluation, impact evaluation, and outcome evaluation components.
4. Acquire the skills to develop an evaluation plan for public health programs to promote health equity with flow charts and sequential models from start to finish using a theoretical framework, logic model for program development, implementation, and evaluation.
5. Select, choose, and design evaluation tools and measures for public health programs that emphasize underserved and marginalized populations.
6. Understand the challenges and barriers in implementing and evaluating health promotion programs for underserved and marginalized populations and how to navigate such barriers.
7. Critically evaluate public health programs designed to promote the health of vulnerable, marginalized, and underserved populations.

HESC 6991. Doctoral Research
1-15 Credits (1-15)
Preliminary work on the dissertation in collaboration with the instructor before advancing to candidacy. Permission of instructor required. May be repeated up to 15 credits.
Learning Outcomes
1. Varies by student

HESC 6997. Independent Study
1-15 Credits (1-15)
Individual instruction or research. Permission of instructor required. May be repeated up to 15 credits.
Learning Outcomes
1. Varies by student

HESC 7000. Doctoral Dissertation
1-15 Credits (1-15)
Dissertation. Permission of instructor required. May be repeated up to 15 credits.
Learning Outcomes
1. Varies by student